

CLAIMS

10/032, 287

What is claimed is:

1. A substrate for a liquid crystal device , comprising:

a base; and

a light reflecting film formed on said base, said light reflecting film having a pattern that displays light directivity and light scattering.

2. The substrate for a liquid crystal device according to Claim 1, wherein said pattern is formed by aligning at least one of a plurality of convexities and a plurality of concavities.

3. The substrate for a liquid crystal device according to Claim 2, wherein a spatial shape of said convexities or said concavities along one of two orthogonal axes that pass through said convexities or concavities is different from a spatial shape that extends along the other axis.

4. The substrate for a liquid crystal device according to Claim 2, wherein one side of a spatial shape of said convexities or said concavities bisected by at least one of the two orthogonal axes that pass through said convexities or concavities is asymmetric with the other side thereof.

5. The substrate for a liquid crystal device according to Claim 4, wherein one side of a surface area of said spatial shape is asymmetric with the other side.

6. The substrate for a liquid crystal device according to Claim 4, wherein one angle of said spatial shape with respect to said base is asymmetric with another angle of said spatial shape with respect to said base.

7. The substrate for a liquid crystal device according to Claim 2, wherein said convexities or said concavities are teardrop shaped.

8. The substrate for a liquid crystal device according to Claim 2, wherein said convexities or said concavities are a rectangular pyramid shape in plane section, a rectangular dome shape in plane section, an elliptical dome shape in plane section, or a long dome shape in plane section.

9. The substrate for a liquid crystal device according to Claim 2, wherein said plurality of convexities or said plurality of concavities are all in the same direction and randomly arranged within a plane.

10. The substrate for a liquid crystal device according to Claim 1, wherein at least one of said two orthogonal axes is parallel with the edge of said base.

11. A substrate for a liquid crystal device that is one of a pair of substrates sandwiching a liquid crystal and that is positioned opposite from a viewing-side substrate, comprising a base and a light reflecting film formed on said base; wherein at least one of a plurality of convexities and a plurality of concavities are formed and arranged in a reflecting pattern on said surface of said light reflecting film; and with respect to an amount of light reflected on said reflection pattern, a profile of the amount of light along one of two orthogonal axes that pass through said convexities or said valleys is different from the profile of the amount of light along the other of the two orthogonal axes.

12. The substrate for a liquid crystal device according to Claim 11, wherein said profile of the amount of light along said one axis is peak shaped, and said profile of the amount of light along said other axis is a straight line.

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13. A method of manufacturing a substrate for a liquid crystal device comprising the steps of:

forming a light reflecting film on a surface of the base, and
employing a mask to form at least one of a plurality of convexities and a plurality of concavities on the surface of said light reflecting film;
wherein a shape of a mask pattern of said mask for said convexities or said concavities along one axis of two orthogonal axes that pass through said convexities or concavities is different from the shape that extends along the other axis.

14. A method of manufacturing a substrate for a liquid crystal device comprising the steps of:

forming a light reflecting film on the surface of a base; and
employing a mask to form at least one of a plurality of convexities and a plurality of concavities on a surface of said light reflecting film;
wherein a shape of one side of a mask pattern of said mask for said plurality of convexities or said plurality of concavities that is bisected by at least one of two orthogonal axes that pass through said convexities or concavities is asymmetric with the other side thereof.

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15. The method of manufacturing a substrate for a liquid crystal device according to Claim 14, wherein said mask patterns of said mask for said plurality of convexities or said concavities are a planar teardrop shape.

16. The method of manufacturing a substrate for a liquid crystal device according to Claim 14, wherein said mask patterns of said mask for said plurality of convexities or said concavities are in the same direction and are randomly arranged within a plane.

17. A liquid crystal display device comprising:
a pair of substrates, one substrate including a light reflecting film having a pattern that displays light directivity and light scattering; and
a liquid crystal sandwiched between the pair of substrates.

18. A method for manufacturing a liquid crystal display devise comprising the steps of:

forming a light reflecting film on a substrate; and

employing a mask to form at least one of a plurality of convexities and a plurality of concavities on a surface of said light reflecting film;

wherein a shape of a mask pattern of said mask for said convexities or said concavities along one axis of two orthogonal axes that pass through said convexities or concavities is different from the shape that extends along the other axis.

19. An electronic apparatus comprising:

a liquid crystal display device;

a case accommodating said liquid crystal device,

said liquid crystal device including:

a pair of substrates, one substrate including a light reflecting film having a pattern that displays light directivity and light scattering; and

a liquid crystal sandwiched between the pair of substrates.